APPENDIX A – 2014 Noteworthy Projects

Clean Water Act Consent Decree

Part III Compliance Program

2014 Annual Report

An increasing number of DOT&PF projects are using innovative approaches to protect or enhance the natural environment. DOT&PF's actions have influenced the two primary BMP suppliers in Alaska to expand their BMP inventory, positively affecting the whole Alaskan storm water industry. Innovative erosion and sediment control research and planning have added new and locally available BMPs to our erosion and sediment control toolbox.

Brotherhood Bridge Replacement

The purpose of this project is to replace the Brotherhood Bridge and reconstruct the approach roadway in Juneau, Alaska. Due to this site's abundant rainfall and proximity to an anadromous fish bearing river (the Mendenhall River), implementation of effective stormwater management has been critical. DOT&PF has worked proactively with the Contractor to manage challenging site conditions to protect the water quality of the adjacent Mendenhall River, which is a glacial stream, fed seasonally by cold and turbid glacial meltwater contributed by ice and snow. The river has high sediment loads due to unstable substrates and the river's discharge can be quite variable throughout the year. During the summer of 2014, Juneau experienced above average precipitation with the wettest June and second wettest July on record. During a heavy June rain event, significant stormwater drainage flowed onto the site overwhelming installed BMPs. In response to this issue, a geotextile lined rock filled ditch (Figure 1) and rock flume was constructed to convey clean stormwater through the site and reduce soil erosion.

During the 2014 construction season, record breaking Jokulhlaup floods (glacial outbursts) from the Mendenhall Glacier rapidly released large amounts of water into the Mendenhall River. The project staff responded by ensuring the river banks were sufficiently stabilized and debris caught in the trestle was promptly removed via crane to prevent damming of the river or damage to the trestle (Figure 2). The Brotherhood Bridge staff has stayed vigilant in their efforts to control pollutant discharges.

Figure 1: Stormwater conveyance ditch.

Figure 2: Debris caused by the Jokulhlaup flood was removed with a crane.

Birch Road: Whispering Spruce Intersection Improvements

The Birch Road site distance safety enhancement and asphalt resurfacing project is located on the Anchorage hillside. The foothills of the Chugach Mountain range contribute to the watershed for this project site, resulting in water entering, flowing through and exiting the project limits on a continual basis. The project Notice To Proceed was issued just prior to the highest precipitation on record. The design and timing of construction presented a challenge to water quality protection efforts. The Project Engineer utilized knowledge from DOT&PF Erosion and Sediment Control Training to make plan-set and field changes resulting in a win/win situation for both CGP operators on the project. The project achieved Final Stabilization and received Notice of Termination just four weeks after the commencement of ground disturbing activity. This was despite being constructed after the DOT&PF specified seeding window deadline for cold climates. Stabilization was accomplished by eliminating the plan of topsoil and seed requirement from the project, lining the water conveyance channels with riprap rock and using native grown sod to stabilize disturbed slopes. The enhanced drainage efforts were in addition to both the original plan set and the original budget. Other stabilization measures incorporated were asphalt, recycled asphalt pavement and metal culvert end sections. With minimal cost, the changes resulted in permanent water quality protection. Working together operators and DOT&PF alleviated the potential for endangerment to the health of the environment in the Chugach watershed. Full establishment of seeded vegetation done in the fall in a subarctic environment could have easily taken ten more months for success without this innovative approach.

Figure 1: During construction.

Figure 2: Incipient completion.